

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (CURRENTLY AMENDED) A system for extracting a gaseous fluid to be analyzed from a process environment, comprising:

a probe for extracting said gaseous fluid, the probe comprising:

a first tubular element, which can be positioned within the interior of the process environment, the first tubular element having at one end a gas aspiration opening and defining an internal cavity, and

a second tubular element extending within the cavity of the first tubular element, the second tubular element being operable to inject the gaseous fluid into the interior cavity towards the aspiration opening of the first tubular element, and ~~from there again~~ into the process environment[[],]:

aspiration means for aspirating the gaseous fluid from the process environment through the cavity of the first tubular element of the probe,

take off means connected to the aspiration means for taking off a fraction of the gaseous fluid, the take off means being further connected to an analyzer; ~~means for analysis of the gaseous fluid~~, and

re-injection means for re-injecting the gaseous fluid into the process environment through the second tubular element,

a compressor having an aspiration side and a delivery side, wherein said aspiration means and the re-injection means share the compressor; ~~means, said compressor means having an aspiration side and a delivery side,~~

wherein the first tubular element is ~~fluidly connected to~~ in fluid communication with a control valve, the control valve being selectively means operable to fluidly connect said first tubular element ~~selectively~~ with one of the aspiration side ~~and~~ or said delivery side of the compressor; ~~means;~~ and

wherein the second tubular element is ~~disposed~~ in fluid communication with the delivery side of said compressor ~~means~~ through a reservoir, the second tubular element being throttled in such a way to accelerate the gaseous fluid flowing through it and, at the same time, to allow an accumulation of the gaseous fluid upstream within said reservoir,

wherein ~~in such a way that the system can assume~~ an aspiration condition, ~~wherein~~ the gaseous fluid is aspirated through the first tubular element and is partially re-injected through the second tubular element and partially accumulated by the reservoir, and in a back washing condition, ~~wherein~~ the accumulated gaseous fluid is released by the reservoir through the ~~said~~ first tubular element by ~~means of~~ selective activation of the control valve ~~means~~.

2. (CURRENTLY AMENDED) A system according to Claim 1, wherein the end of the second tubular element disposed on a the process environment side of the aspiration opening, is provided with a nozzle.

3. (PREVIOUSLY PRESENTED) A system according to Claim 1, in which the first and second tubular element are coaxial.

4. (CURRENTLY AMENDED) A system according to Claim 3, further comprising connector elements, pierced nuts and gas tight seals operable to assemble the said first and

second tubular element and to render the second tubular element slidable with respect to the first tubular element.

5. (PREVIOUSLY PRESENTED) A system according to claim 1, further comprising a cooling jacket disposed around the first tubular element.

6. (PREVIOUSLY PRESENTED) A system according to Claim 5, wherein the cooling jacket is disposed in such a way as to define an inter space interposed between the jacket and the first tubular element.

7. (PREVIOUSLY PRESENTED) A system according to Claim 5, wherein the cooling jacket is assembled in a separable manner from the first tubular element of the probe.

8. (PREVIOUSLY PRESENTED) A system according to claim 5, wherein the cooling jacket is connected in fluid communication with a low temperature refrigerator with a closed fluid circuit.

9. (PREVIOUSLY PRESENTED) A system according to claim 1, further comprising a shielding element disposed in proximity to the aspiration opening.

10. (PREVIOUSLY PRESENTED) A system according to claim 1, further comprising decanter means and drying means disposed downstream of the probe in such a way as further to reduce the dust and the condensate in the gas.

11. (CURRENTLY AMENDED) ~~A system according to claim 1, further comprising A~~
system for extracting a gaseous fluid to be analyzed from a process environment, comprising:

a probe for extracting said gaseous fluid, comprising a first tubular element, which can be positioned within the interior of the process environment, the first tubular element having at one end a gas aspiration opening and defining an internal cavity, and a second tubular element

extending within the cavity of the first tubular element, the second tubular element being operable to inject the gaseous fluid into the interior cavity towards the aspiration opening of the first tubular element and from there again into the process environment;

aspiration means for aspirating the gaseous fluid from the process environment through the cavity of the first tubular element of the probe;

take off means connected to the aspiration means for taking off a fraction of the gaseous fluid, the take off means being further connected to analyzer means;

re-injection means for re-injecting the gaseous fluid into the process environment through the second tubular element; and

a vacuumeter connected to the first tubular element of the probe and a manometer connected to the second tubular element of the probe for monitoring the operation conditions of the probe;

wherein said aspiration means and the re-injection means share compressor means, said compressor means having an aspiration side and a delivery side, wherein the first tubular element is fluidly connected to control valve means operable to fluidly connect said first tubular element selectively with one of the aspiration side and said delivery side of the compressor means; and

wherein the second tubular element is disposed in fluid communication with the delivery side of said compressor means through a reservoir, the second tubular element being throttled in such a way to accelerate the gaseous fluid flowing through it and, at the same time, to allow an accumulation of the gaseous fluid upstream within said reservoir;

wherein in an aspiration condition, the gaseous fluid is aspirated through the first tubular element and is partially re-injected through the second tubular element and partially accumulated

by the reservoir, and in a back washing condition, the gaseous fluid is released by the reservoir through the first tubular element by activation of the control valve means.

12. (CURRENTLY AMENDED) A method for extracting and re-injecting a gaseous fluid from and to a process environment, ~~the method using~~ with a probe for extracting said gaseous fluid, the probe comprising a first tubular element, ~~which can be positioned~~ positionable within the interior of the process environment, the first tubular element having at one end a gas aspiration opening and defining an internal cavity; [[,]] and a second tubular element extending within the cavity of the first tubular element, the second tubular element being operable to inject the gaseous fluid into the interior of the cavity towards the aspiration opening of the first tubular element and ~~from there again~~ into the process environment, ~~wherein the method comprises the following steps comprising:~~

aspirating the gaseous fluid from the process environment through the cavity of the first tubular element of the probe,

taking off a fraction of the gaseous fluid for analyzing the gaseous fluid,

re-injecting a first portion of the gaseous fluid into the process environment through the second tubular element of the probe,

~~wherein said gaseous fluid is only partially re-injected into the process environment,~~

accumulating a second portion of the gaseous fluid; ~~being accumulated apart, and in that the method comprise~~

performing [[a]] back washing step, wherein the accumulated gaseous fluid is released into the process environment through the first tubular element.

13. (CURRENTLY AMENDED) A method to claim 12, wherein the said back washing step is ~~preformed~~ performed cyclically.

14. - 17. (CANCELLED)